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09/329,456	06/10/1999	MICHAEL PIERRE CARLSON	AT9-99-149	8115

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EXAMINER
TANG, KENNETH

ART UNIT	PAPER NUMBER
2156	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/329,456	Applicant(s) CARLSON ET AL.
	Examiner Kenneth Tang	Art Unit 2156

-- The MAILING DATE of this communication appears on the c ver sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1, 2, 11, 14, 15, 24, 27, and 28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Referring to claims 1, 2, 11, 14, 15, 24, 27, and 28, "status information" needs to be defined in the specification because it is not explicitly understood what status-type of information it constitutes of.

2. Claims 4 and 17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Referring to claims 4 and 17, "first class" needs to be defined in the specification because it is not explicitly understood what this terminology means with respects to the "single thread."

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2, 11, 14, 15, 24, 27, and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claims 1, 2, 11, 14, 15, 24, 27, and 28, the term "status information" is indefinite. For example, the 2nd step determination is made to determine whether a thread is active (based on status information). Then in the last step (lines 12-15), we disregard that determination and initiate cleanup anyway. These steps (1-2) are not related to the method of the invention.

4. Claims 4 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claims 4 and 17, the term "first class" is indefinite. It is unclear whether class refers to type of thread or importance of a thread.

5. Claims 12 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claims 12 and 25, it is not explicitly clear how the "event" can be "a period of time." It is believed that the applicant may mean the "event occurs in a period of time." Clarification is needed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

While claims were rejected under 35 USC 112, 1st paragraph, in order to advance prosecution, claims will be treated on the merits in view of the examiner's best understanding of the disclosure and the prior art.

6. Claim 1-3, 6, 11, 13-16, 19, 24, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager (US 6,418,542).

Referring to claim 1, 11, 14, 24, 27, and 28, Yeager discloses a data processing system for monitoring a plurality of related threads with the following steps:

- **polling** the **plurality** or related **threads** for **status information** ("**polling thread**" for "**input events**", col 2, lines 54-59 and "**plurality of threads**", col 3 lines 35-41);
- determining whether a **thread** within a **plurality of related threads** is **active** as a response to **receiving status information** ("**multi-threaded process**" contains "**information** on each **thread** in the **plurality of threads**", col 3, lines 37-39, and "**active**", "**threads**", "**critical signal**" determines if active, col 3, lines 16-22);

- initiating **cleanup** processes for the **thread** based on the **status information** ("**cleaning** up a particular **thread's resources**", "**critical signal handler**" decides when to clean based on its access to the **"data in shared memory",** col 8, lines 38-46).

Yeager fails to explicitly teach:

- performing the cleanup process in response to an absence of a determination that a thread within the plurality of related threads is active

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to clean up errors whenever they occur, or more specifically, perform a "cleanup" when the system fails to determine if the threads are active. This would increase the efficiency because in the instance of being active, the unnecessary resource could be used by other threads.

Referring to claim 2 and 15, Yeager teaches having information stored in a shared memory 116 after it is read or received (col 5, lines 27-32).

Referring to claims 3 and 16, Yeager fails to explicitly teach polling, determining, and the initiating steps to be performed all in a single thread. However, it would have been obvious to include this feature in a single thread because it would make the whole overall process faster if the polling, determining, and initiating steps were done all together at the same time, rather than performing each one individually one step at a time.

Referring to claims 6 and 19, it is obvious to reset resources allocated to an identified inactive thread such that the resources are reallocatable because this will allow the information to be deleted.

Referring to claims 13 and 26, Yeager discloses an event that is an error ("illegal memory access error", col 4, lines 37-42).

7. Claims 9, 10, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager (US 6,418,542) in view of Win (US 6,182,142).

Referring to claims 9, 10, 22, and 23, Yeager fails to explicitly teach implementing this system with a **virtual machine** or **Java virtual machine**. Win teaches using a "**Java Virtual Machine**" (col 25, lines 50-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a virtual machine or Java virtual machine to the existing system of Yeager for the reason of utilizing system independence; a Java application will run the same in any Java VM, regardless of the hardware and software underlying the system.

Referring to claims 12 and 25, the reference of Win discloses an event that has a "pre-determined period of time" (col 10, lines 39-45).

8. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager (US 6,418,542) in view of Nation (US 6,233,599).

Referring to claims 5 and 18, Yeager fails to explicitly teach having the initiating step identify active threads and inactive threads within the plurality of related threads. However, Nation discloses a "thread identifer" that can identify if a thread is active or inactive (Figure 9, 974, and col 22, lines 23-36). Yeager also fails to explicitly teach terminating the inactive threads. However, it would be obvious to delete inactive threads as a "clean up" mechanism for the system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Nation to the existing system of Yeager for the reason of being able to identify if the threads are active or inactive so that the system will know when to carry out the cleanup process.

9. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager (US 6,418,542) in view of Anschuetz (US 5,305,455).

Referring to claims 7 and 20, Yeager fails to explicitly teach having the plurality of threads be **printer threads**. Anschuetz discloses a data processing system, which uses "**a thread to control a printer**" (col 3, lines 42-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use printer threads for the threads in the existing system of Yeager so that it can have a means for outputting information on a printer.

10. Claims 8 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager (US 6,418,542) in view of Yee (US 5,471,576).

Referring to claims 8 and 21, Yeager fails to explicitly teach having the plurality of threads be video threads. Yee discloses a data processing system, which uses "video threads in the application program" (col 4, lines 44-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use video threads for the threads in the existing system of Yeager so that it can have a means for outputting information onto video.

11. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager (US 6,418,542) in view of Cejtin (US 5,745,703).

Referring to claims 4 and 17, Yeager fails to explicitly teach having the single thread as part of a first class. However, Cejtin discloses "threads" as "first-class objects" (col 12, lines 59-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature of Cejtin to the existing system of Yeager for the reason of improving the data processing system by having a higher-order abstraction for building remote references or address spaces (higher-order abstraction, remote references, address spaces, col 1, lines 59-67, and col 2, lines 1-3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alvin Oberley can be reached on (703)305-9716. The fax phone numbers for the organization where this application or proceeding is assigned are none for regular communications and none for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is none.

Kenneth Tang
kt
August 22, 2002

MAJID A. BANANKHAH
PRIMARY EXAMINER